ABSTRACT OF THE DISCLOSURE

A system and method for controlling clutter Doppler spread in a bistatic radar system is developed resulting in enhanced detection of low-Doppler targets or improved SAR mode performance. In an illustrative embodiment, a bistatic radar system (10) includes a transmitter (12) for transmitting electromagnetic energy (106) towards a target (16), a receiver (14) adapted to receive the electromagnetic energy (116) reflected from the target (16), and a processor (122) for optimizing a parameter or parameters of the system such that the directional derivative of the bistatic Doppler field along the isorange contour is near a desired value. The parameters to be optimized may include the transmitter velocity vector, the receiver velocity vector, or the receiver azimuth flight direction. The desired value is the minimal absolute value of the directional derivative in order to minimize the clutter Doppler spread, or the maximum absolute value of the directional derivative in order to maximize the clutter Doppler spread.